REMARKS/ARGUMENTS

Claims 1-3 and 5-53 remain in this application. Claim 4 has been previously canceled. Claims 54-222 have been withdrawn as a result of an earlier restriction requirement.

1. § 103 Rejections

The Examiner has rejected Claims 1-3, 17, 24-27 and 33 under 35 U.S.C. 103(a) as being unpatentable over Heitmann (US 5,609,666) in view of Siegfried (US 4,235,616).

Respectfully, the rejection is flawed. In particular, there is no motivation or suggestion to make the combination of Heitmann and Siegfried in the first place. First, it is clear that Heitmann did not recognize the desirability of utilizing an H-Free fuel, as it teaches the use of CH_4 (Col. 1, lines 59-62), i.e., an H-containing fuel. Because of the formation of water vapor in the process of burning an H-free fuel, Heitmann has tried to ameliorate the problem by providing a drying gas mixture from the inside out through the pores of the soot preform. There is no statement in Heitmann that it is deficient in any way, or that the preform is in further need of water reduction – but instead poses itself as *the solution*. As such, there is no requisite motivation for further modifying Heitmann. Examiner is reminded that he may not arbitrarily combine references without the requisite teaching, suggestion or motivation in the art to do so.

Furthermore, the drying gas mixture in Heitmann includes a chemically active gas and additional gases such as helium, argon and oxygen (Col. 4, lines 21-25). Examiner should note also that there is *no teaching whatsoever* that the environment provided to the soot preform in Heitmann be *substantially water-free*, as required by Claim 1. It simply says it is a drying atmosphere – Examiner is improperly inferring that it is *substantially water-free*. In particular, there is no mention about whether such *gases do or do not contain water*.

Further yet, Siegfried is directed to an IVD (an inside) process. Thus, one of ordinary skill in the art would not necessarily apply any of its teachings to an OVD (outside) process. Direct proof of this is the existence of Heitmann which, 13 years after the filing of Siegfried, chose another method to address the water problem in OVD. Clearly, Heitmann did not recognize the benefits that the claimed combination could provide, i.e., the combination of using an H-free fuel while simultaneously flowing a substantially water-free environment over the preform.

Accordingly, for the reasons set forth above, the rejection of Claim 1 is improper and should be withdrawn.

In regards to Abbott et al (US 5,116,400), it obtains its gas from filtered room air and, thus, is not a *dry atmosphere* as required by the claim.

In regards to Lemon et al. (US 6,266,980) and Daito (JP 09110454), neither teach transfer in a substantially water-free environment. Specifically, neither reference refers to the water-free nature of the gas – they are both silent about it. Examiner is improperly *assuming obviousness at the point of novelty*.

The rejections made by combining Heitmann and Siegfried and other references are equally flawed in that the addition of another reference does not remedy the fundamental deficiency of the basic combination. Accordingly, the rejections of Claims 2-3 and 5-53 should also be withdrawn.

2. Response to Advisory Action

In response to Examiner's comments in the Advisory Action, the following supplemental argument is provided. Examiner states that it is the knowledge of the person of ordinary skill in the art that has motivated the combination of Heitmann and Siegfried. Respectfully, such an argument is flawed. The existence of Siegfried is itself the best evidence that the combination is not obvious. Siegfried, was in existence since 1980 and, yet, Heitmann (circa 1993) armed with the knowledge of Siegfried chose to introduce water into the soot by using CH_4 and then dry the preform after such introduction by subjecting the pores to a drying gas under positive pressure. Heitmann did not recognize that a drier preform could be achieved by utilizing a substantially H-free fuel. Clearly Heitmann was not so motivated and the only way Examiner can render the claims obvious is by utilizing improper hindsight reconstruction.

In particular, laying down dry glass is very important in an IV process, as the soot is immediately consolidated into a glass layer. Thus, use of an H-Free fuel is desired to achieve low water levels in the glass. Contrarily, conventional OVD processing has always included later drying steps (see Col. 2, lines 16-19 of Heitmann). Heitmann discloses an improvement which reduces drying time and consumption of drying gases. Although this was an advancement, Applicants have further improved upon Heitmann by: 1) not first introducing water (OH ions) into the soot at the point of hydrolization, and 2) by flowing a substantially-water free atmosphere over the preform during deposition. This *flowing over* ensures that no water gets to the surface of the preform. Notably, Heitmann admits that its process "may still contain a certain OH concentration" and therefore requires additional drying steps (See Col. 4, lines 10-15).

Further, Examiner should note there are also many reasons for <u>not choosing</u> a substantially H-free fuel for OVD which further mitigate against making the combination. For example, CO is a very poisonous gas. Accordingly, its use is less than desirable. Moreover, its flame front is extremely slow, particularly in an OVD burner. In fact, its burn speed is so low that when a low water content environment is provided around the OVD burner it has the propensity to blow itself out. Applicants have added certain additives to the substantially H-free fuel (see present application) to reduce the propensity of the burner to self extinguish its flame. Such additives are first disclosed in the present application. The slow flame front speed mitigated against its use in OVD. Accordingly, the rejection is flawed and should be withdrawn.

3. Conclusion

Based upon the above amendments, remarks, and papers of records, Applicants believe the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Applicants believe that a one month extension of time is necessary to make this Reply timely. Should Applicants be in error, Applicants respectfully request that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Randall S. Wayland at 607-974-0463.

Respectfully submitted,

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Randall S. Wayland
Attorney for Assignee
Reg. No. 36,303
Corning Incorporated
SP-TI-03-1
Corning, NY 14831
(607) 974-0463